

c.) Amendments to the Claims.

Please cancel claims 20-24 without prejudice or disclaimer of the subject matter thereof.

Please add new claims 31-41.

Please amend claims 1, 4, 14-19 and 28-30, again without prejudice or disclaimer of the subject matter thereof, as follows:

1. (currently amended) An isolated peptide having an amino terminus and a carboxy terminus comprising the sequence of SEQ ID NO 3, and a plurality of fatty acids, each of which is couple to an amino acid of said sequence, wherein said peptide, when administered to a patient, increases the effective innate immune system response of said patient.
2. (original) The isolated peptide of claim 1, which further comprises an arginine at the amino terminus.
3. (original) The isolated peptide of claim 1, which further comprises a phenylalanine at the carboxy terminus.
4. (currently amended) The isolated peptide of claim 1, ~~which further comprises a plurality of fatty acids~~ wherein the effective innate immune system response is selected from the group consisting of up-regulation of cytotoxic or phagocytic immune cells, macrophage activation, natural-killer cell activation, T-cell activation, acute-phase protein production, antibody production, initiation of an inflammation cascade, antibody production, and combinations thereof.
5. (original) The isolated peptide of claim 4, wherein the plurality of fatty acids includes at least one unsaturated fatty acid.
6. (original) The isolated peptide of claim 4, wherein each of the fatty acids of said plurality are selected from the group consisting of stearic acid, arachidic acid, arachadonic acid, and combinations thereof.
7. (original) The isolated peptide of claim 1, which comprises a nonapeptide.
8. (original) The isolated peptide of claim 1, comprising the sequence of SEQ ID NO 2.
9. (original) The isolated peptide of claim 8, wherein X₁ and X₂ of SEQ ID NO 2 are derivatized amino acids.

10. (original) The isolated peptide of claim 8, wherein X₁ comprises phenylalanine and X₂ comprises serine.
11. (original) The isolated peptide of claim 1, which further comprises a serine-O-fatty acid ester.
12. (original) The isolated peptide of claim 1, which comprises the sequence of SEQ ID NO 5.
13. (original) The isolated peptide of claim 12, which further comprises up to three fatty acids, at least one of which is an unsaturated fatty acid, wherein each of the up to three fatty acids are selected from the group consisting of stearic acid, arachidic acid, arachadonic acid, and combinations thereof.
14. (currently amended) ~~The An~~ isolated peptide of ~~claim 1~~, which comprises the sequence of SEQ ID NO 1 as depicted in Figure 5, wherein R₁, R₂ and R₃ represent fatty acid groups selected from the group consisting of stearic acid, arachidic acid, and arachadonic acid.
15. (currently amended) ~~A method for isolation of a peptide of the sequence of SEQ ID NO 1, SEQ ID NO 2, SEQ ID NO 3 or SEQ ID NO 5 comprising: dialyzing serum obtained from a mammal with a 6-10 kD cut-off dialysis membrane to produce a dialysate; and separating from said dialysate a fraction that elutes between 40 kD and 50 kD~~ The isolated peptide of claim 14, which is obtained from the serum of a mammal.
16. (currently amended) ~~The method~~ isolated peptide of claim 15, wherein the mammal is a horse, a goat or a human.
17. (currently amended) An isolated peptide comprising the sequence of SEQ ID NO 1, SEQ ID NO 2, SEQ ID NO 3, or SEQ ID NO 5, wherein at least one amino acid of said sequence is coupled to a fatty acid, and said peptide is capable of being isolated from a mammal by the method of claim 15 a method comprising either:
- dialyzing serum obtained from the mammal with a 6-10 kD cut-off dialysis membrane to produce a dialysate; and separating from said dialysate a fraction that elutes between 40 kD and 50 kD; or

passing serum obtained from the mammal through a 70 kD to 100 kD cut-off ultrafiltration membrane to produce a filtrate; and isolating a fraction from said second retentate that has a median molecular weight of between 40 kD and 50 kD; and

said peptide, when administered to a patient at a therapeutic dosage, increases the effective innate immune system of said patient.

18. (currently amended) ~~A method for isolation of a peptide of the sequence of SEQ ID NO 1, SEQ ID NO 2, SEQ ID NO 3 or SEQ ID NO 5 comprising:~~ passing serum obtained from a mammal through a 70 kD to 100 kD cut-off ultrafiltration membrane to produce a filtrate; passing said filtrate through a 10 kD cut-off ultrafiltration membrane to produce a retentate; and isolating a fraction from said second retentate that has a median molecular weight of between 40 kD and 50 kD The isolated peptide of claim 17, wherein at least three fatty acids are each covalently coupled to an amino acid of said sequence.

19. (currently amended) ~~The method~~ isolated peptide of claim ~~18~~ 17, wherein the mammal is a horse, goat or a human.

20 – 24. (canceled).

25. (original) A pharmaceutical composition comprising the isolated peptide of claim 1 and a pharmaceutically acceptable carrier.

26. (original) The pharmaceutical composition of claim 25, wherein the pharmaceutically acceptable carrier is selected from the group consisting of water, an oil, an alcohol, glycerol, or a combination thereof.

27. (original) The pharmaceutical composition of claim 25, which does not contain sufficient endotoxin to promote a pyrogenic response.

28. (currently amended) ~~An isolated antibody or antibody fragment that is specifically reactive against the peptide of claim 1~~ The pharmaceutical composition of claim 25, wherein said composition has low toxicity and a low incidence of side effects when administered to a patient at a therapeutic dosage.

29. (currently amended) ~~An isolated nucleic acid that encodes the sequence of the peptide of claim 1~~ The pharmaceutical composition of claim 25, wherein said composition is free from contaminants and toxins.

30. (currently amended) ~~An isolated nucleic acid that hybridizes in whole or in part to the nucleic acid of claim 29~~ The pharmaceutical composition of claim 25, which stimulates the innate immune response of a patient when administered to said patient at a therapeutic dosage.

31. (new) An isolated peptide comprising:

a sequence consisting essentially of SEQ ID NO 1, SEQ ID NO. 2, or SEQ ID NO. 3;
and

a plurality of fatty acids each covalently attached to an amino acid residue of said sequence.

32. (new) The peptide of claim 31, wherein each fatty acid of the plurality is selected from the group consisting of stearic acid, arachidic acid, and arachadonic acid.

33. (new) The peptide of claim 31, wherein the plurality comprises up to three.

34. (new) The peptide of claim 32, wherein the sequence is SEQ ID NO. 2 and position X₁ and X₂ is each a derivatized or a non-derivatized amino acid.

35. (new) The peptide of claim 32, wherein X₁ is a phenylalanine.

36. (new) The peptide of claim 32, wherein X₂ is a serine or serine-o-fatty acid ester.

37. (new) The peptide of claim 31, which increases effective innate immune-system response when administered to a patient.

38. (new) The peptide of claim 37, wherein the effective innate immune response is selected from the group consisting of up-regulation of cytotoxic or phagocytic immune cells, macrophage activation, natural-killer cell activation, T-cell activation, acute-phase protein production, antibody production, initiation of an inflammation cascade, antibody production, and combinations thereof.

39. (new) An isolated peptide comprising:

a sequence consisting essentially of SEQ ID NO 3; and

up to three fatty acids selected from the group consisting of stearic acid, arachidic acid and arachadonic acid that are covalently linked to one or more of the amino acids of said sequence.

40. (new) The peptide of claim 39, which, when administered to a patient, increases the effective innate immune system response of said patient.

41. (new) The peptide of claim 40, wherein the effective innate immune response is selected from the group consisting of up-regulation of cytotoxic or phagocytic immune cells, macrophage activation, natural-killer cell activation, T-cell activation, acute-phase protein production, antibody production, initiation of an inflammation cascade, antibody production, and combinations thereof.